

BLOOD AND BLOOD DERIVATIVES FOR THE AMERICAN PEOPLE*

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Interest in the development of programs to supply blood and its derivatives for civilian use is rapidly becoming widespread among health departments, medical societies, and hospitals. The wartime program of the American National Red Cross, sponsored by the Army and the Navy, made blood and its derivatives readily available to the armed forces, and their use has overwhelmingly demonstrated the great value of these products in military medical practice. That whole blood, blood plasma, and albumin were the foremost lifesavers of the war-wounded has been certified by the thousands of medical officers in all services on every front throughout the world. This fact needs no elaboration. Plasma and albumin and later whole blood were available to American fighting men everywhere through the Red Cross program which in the nearly four years that this country was in the war literally poured these life-saving fluids from civilian veins into the wounded fighters' bodies. More than thirteen and one-quarter million pints of blood were procured through 35 fixed blood donor centers and their 63 mobile units.

This wartime blood donor program sponsored by the Army and the Navy came to a close on September 15, 1945, and the thousands of devoted workers, both paid and volunteer, wrote "finis" to their efforts. In the meantime, however, the American Red Cross had been considering the possibility of reconverting its wartime program for the armed forces into a service for civilians. In fact, as early as May, 1943, the Medical and Health Advisory Committee had given consideration to the question of the possible use of the crude material left over from the processing of serum albumin. In due course it was decided to convert this material into immune serum globulin (gamma globulin) for the prophylaxis and modification of measles among the civilian population. Arrangements for the processing and distribution were actually made and announced by June, 1944, and the operation, with certain improvements in the plan, was well under way by the spring of 1945.

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Furthermore, in June, 1944, the Medical and Health Advisory Committee recommended that a study be made in anticipation of the close of the war, as to the need for Red Cross activity in peacetime in the procurement of blood for civilians. Accordingly, consultation was held with the United States Public Health Service, the Board of Trustees of the American Medical Association, the Conference of State Medical Society Secretaries and Editors of State Medical Journals, the Association of State and Territorial Health Officers, the American Hospital Association, and representatives of those Red Cross chapters which participated in the wartime blood donor program. There was general agreement that the American Red Cross should authorize chapters to cooperate with state and local health departments, medical societies, and hospital groups in the procurement of blood for civilians.

Thus accordingly, by May, 1945, three months before V-J Day, it was announced that the American Red Cross would continue to use its intensive experience gained in the wartime blood program to assist in the development of plans for providing blood and its derivatives without cost to civilians. Through its chapters, which together serve every county and city in the United States, the Red Cross is prepared to help states and communities obtain blood and its derivatives for civilian use. This "help" by Red Cross chapters may consist of as little as the furnishing of volunteers to maintain current records of blood donor files or may be extended to cover the complete cost of operation of a whole program under professional supervision, such as is carried on at present in Los Angeles City and County.

The conditions under which civilian blood programs may be organized under the Red Cross plan are simple and are based upon sound principles. The chief requirements are:

1. That the blood and blood derivatives produced must be furnished without charge to physicians, hospitals, and clinics within the area served by the program;
2. That the cost of blood collection, processing, and distribution must not be charged to patients;
3. That blood donors are to be recruited on a voluntary basis and blood is not to be accepted from any person expecting payment for his donation;
4. That the program be sponsored by the appropriate health department, medical society, or hospital agency and be approved by all three;

5. That the technical operations be conducted in accordance with standards approved by an advisory group of specialists in the field of blood and blood derivatives.

Although no charge is to be made for the blood itself or for a blood product, this does not debar physicians and hospitals from charging for their services in administering the blood or blood derivatives.

The sponsoring agency may be defined as any recognized medical, hospital, or health agency having jurisdiction over the area to be served by the program. In most instances the agencies meeting these requirements consist of the health department, the medical societies, and the hospital agency, state, county, or local as the case may be.

These requirements are all in the interest of providing the maximum protection for the donor and of giving to the civilian population the benefit of the intensive experience gained by the Red Cross and the agencies associated with it in the operation of its blood donor service for the armed forces. They will encourage the establishment on a nationwide basis of proper standards of donor procurement and enrollment and of blood procurement policies and techniques. It is believed that the continuance of the Red Cross in the field of blood donor service, for which its name and emblem have virtually become the symbol during the war, will inspire public confidence and stimulate a more ready response on the part of volunteer blood donors than could probably be elicited by any other agency, and thus facilitate the widest possible distribution of the products of a blood donor service to those who need them.

Until country-wide civilian blood services are established, the Red Cross will be able to a degree to help bridge the gap with its present program of distributing surplus dry plasma. Already available throughout the country, war-surplus plasma is continuing its job of helping to save lives. When hostilities ceased sooner than was expected, the Army and the Navy found that there were on hand approximately a million and a quarter packages of dry plasma, over and above the estimated needs of the peacetime armed forces during the five-year dating period of the plasma.

According to Public Law 457 of the 78th Congress, approved October 3, 1944, no surplus property which was processed, produced, or donated by the American Red Cross for any government agency could be disposed of except after notice to and consultation with the American Red Cross, and all or any portion of such property could be turned over

to the American Red Cross, upon its request, to be used solely for charitable purposes. As soon as it was known that stocks of plasma were to be declared surplus, the American Red Cross made a formal request for it and prepared to distribute it for use in civilian medical practice. The Army and the Navy heartily cooperated. The plan of distribution was carefully worked out in collaboration with the Association of State and Territorial Health Officers and has the approval of the American Medical Association and the American Hospital Association.

As the plasma came back from every corner of the globe, Red Cross distribution channels were ready. Since January, 1946, surplus plasma has been delivered to every state health department in the United States for distribution within the states to physicians and hospitals for civilian use. In addition to the civilian supply, a quantity of these plasma reserves has been earmarked to meet the estimated needs of the Veterans Administration and the Marine Hospitals of the United States Public Health Service for the dated life of the plasma.

Since the launching of this program a total of 610,000 packages has been distributed to state health departments, territories, and insular possessions in their original battle containers. Each package, so familiar to the members of the medical profession who served with the armed forces, is complete in itself. The sealed cans contain the dry plasma, distilled water, tubing, needles, and directions for use. In addition, special technical information prepared by specialists in the field of blood and blood derivatives has been supplied to state health departments for distribution to physicians. This great amount of plasma is being handled very efficiently by the health departments, physicians, and hospitals throughout the country. In spite of the numerous details connected with the distribution and accounting, there has been wholehearted and complete cooperation all the way. The health departments have done a superlative job. The hospitals have kept faith in administering the plasma without regard to race, creed, or financial standing and without charge except for a reasonable fee for professional services in actually making a transfusion.

It should be pointed out, however, that plasma is only a temporary expedient in a community's needs, and that this particular surplus plasma will probably continue to be available only until early 1948. In the first place, as is well known, plasma has its limitations, and when whole blood is available it rather than plasma should be used in at least 4

cases out of 5. During this interval of freely available plasma, a fortunate respite, communities should be at work planning and developing their blood and blood derivatives programs on a permanent basis.

A brief discussion of certain other projects under development by the Red Cross in the field of blood and blood derivatives for civilians would seem indicated to round out the picture.

A project mentioned earlier is the distribution of immune serum globulin (gamma globulin) through State Departments of Health for the prevention and modification of measles. A quantity of crude globulin declared surplus by the Navy was turned over to the American Red Cross in the spring of 1944. This material was processed by commercial laboratories under contract with the American Red Cross, and since the spring of 1945 approximately 500,000 doses of gamma globulin have been distributed to health departments for free use by physicians throughout the United States.

This derivative will continue to be available for some time to come through another million dollar program which the Red Cross now has under way. This program grew out of necessity when it was discovered that a sizable lot of dry plasma had become outdated or was otherwise unsuitable for use as plasma. According to our survey, this lot consisted of approximately 250,000 packages of dry plasma, and the question arose immediately as to possible methods of salvaging it. It was, of course, an established fact that through the highly technical processes of fractionation, fresh liquid plasma could provide certain derivatives, such as gamma globulin, serum albumin, fibrin films and foams, antihemophilic globulin, and others.

A test fractionation run of redissolved substandard dry plasma was authorized by the Red Cross and carried out by a commercial laboratory. This experimental process has proved successful and we are assured of obtaining a significantly large salvage of useful and scientifically proven derivatives. It is now certain that all of the above-mentioned derivatives will be obtained in this reprocessing job. The eventual distribution of these products (with the exception of gamma globulin, which we shall continue to distribute under present plans) will be determined after taking counsel with our technical advisory committee, but since the quantities will not be great when considered on a nation-wide plan, and since many of them are still in the experimental stage of clinical

use, they will probably be controlled along lines similar to those applied to penicillin and to streptomycin in their early stages of production.

An important detail concerning the above program is the ratio of return on the million dollar investment of the American Red Cross in this salvage operation on behalf of the American people. From the reprocessing of these 250,000 substandard packages of dry plasma at a cost of a million dollars the resultant products would be worth, at present market values, several times that amount. These products will all be returned to the people without charges of any kind and without monetary profit to anyone.

Of greater significance than the dollar value of these derivatives will be the tremendous benefits which will result from these scientifically controlled and directed research studies in the use of serum albumin, fibrin foams and films, gamma globulin, antihemophilic globulin, and other products. This is one among several projects on the list of Red Cross activities which we hope will lead eventually to the goal where blood and all its many useful derivatives will be readily available to every citizen in the United States.